

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

1-53. (Canceled).

54. (Currently Amended) ~~The patient infusion system of claim 53 wherein the~~ A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

an infusion apparatus positioned within a room shielded from electromagnetic interference and operable to inject fluid into a patient during a magnetic resonance imaging procedure, the infusion apparatus comprising an injector and an injector control unit connected by a non-rigid drive connection, said injector control unit including a drive motor;

a system controller positioned external to the shielded room;

a communication control link between the system controller and the injector control unit, the communication control link is adapted to be substantially non-reactive with the magnetic resonance magnetic field of the imaging system during operation of the patient infusion system and the magnetic resonance imaging system to generate diagnostic images of the patient.

55. (Currently Amended) ~~The patient infusion system of claim 53~~ 54 wherein the communication control link comprises a fiber optic line.

56. (Currently Amended) ~~The patient infusion system of claim 53~~ 54 wherein the communication control link comprises means for transmitting and receiving electromagnetic energy through a window in the shielded room.

57-58. (Canceled).

59. (Currently Amended) The patient infusion system of claim ~~53~~ 54 wherein the communication control link ~~comprises means for transmitting and receiving~~ transmits electromagnetic energy.

60-61. (Canceled).

62. (Currently Amended) The patient infusion system of claim ~~52, further comprising~~ wherein the at least two syringes are operably engaged with at least one drive mechanism of the infusion apparatus 54, wherein the infusion apparatus further comprises two drive mechanisms and is adapted to accommodate two syringes for injecting fluid into the patient during a magnetic resonance imaging procedure, each syringe being operably engageable with a respective one of the drive mechanisms.

63-116. (Canceled).

117. (New) The patient infusion system of claim 54, further comprising at least one battery for powering the infusion apparatus without substantial interference with the magnetic resonance imaging system.

118. (New) A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

an infusion apparatus positioned within a room shielded from electromagnetic interference, the infusion apparatus comprising:

an injector adapted to accommodate two syringes mountable thereon for injecting fluid into a patient during a magnetic resonance imaging procedure;

two drive mechanisms, each drive mechanism comprising a drive motor and being engageable with a respective one of the two syringes; and

an injector control unit positioned within the shielded room;

a system controller positioned external to the shielded room; and

a communication control link between the system controller and the injector control unit, the communication control link adapted to be substantially non-reactive with the magnetic resonance imaging system during operation of the patient infusion system and the magnetic resonance imaging system to generate diagnostic images of the patient.

119. (New) The patient infusion system of claim 118 wherein the drive motors are electric drive motors.

120. (New) The patient infusion system of claim 118 wherein the injector control unit comprises a battery for powering the infusion apparatus.

121. (New) The patient infusion system of claim 118 wherein each of the drive mechanisms includes a non-rigid drive connection.

122. (New) The patient infusion system of claim 118 wherein the communication control link comprises a fiber optic line.

123. (New) The patient infusion system of claim 118 wherein the communication control link comprises means for transmitting and receiving electromagnetic radiation through a window in the shielded room.

124. (New) A patient infusion system for use with a magnetic resonance imaging system, the patient infusion system comprising:

a) a room shielded from electromagnetic interference;

b) a system controller external to the shielded room;

c) a patient infusion apparatus within the shielded room and including infusion apparatus control means for controlling an infusion operation;

d) the patient infusion apparatus further including two drive mechanisms each including a drive motor, and an injector adapted to accommodate two syringes mountable thereon for injecting fluid into a patient during a magnetic resonance imaging procedure, each of the syringes operably engageable with a respective one of the drive mechanisms; and,

e) a communication control link between the system controller and the infusion apparatus control means, the control link adapted to be substantially non-reactive with the imaging system.

125. (New) The patient infusion system of claim 124, wherein the communication control link transmits electromagnetic energy.

126. (New) The patient infusion system of claim 124, wherein the communication control link includes means for transmitting and receiving infrared electromagnetic energy.

127. (New) The patient infusion system of claim 124, wherein the communication control link includes means for transmitting and receiving electromagnetic energy in the visual range.

128. (New) The patient infusion system of claim 124, wherein the room shielded from electromagnetic interference includes a viewing window; and wherein the communication control link includes means for transmitting and receiving electromagnetic energy through the viewing window.